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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/065,776	11/18/2002	Christopher Chen	23391/1	2410
21710	7590	11/16/2004	EXAMINER	
BROWN, RUDNICK, BERLACK & ISRAELS, LLP. BOX IP, 18TH FLOOR ONE FINANCIAL CENTER BOSTON, MA 02111			LARSON, LOWELL A	
			ART UNIT	PAPER NUMBER
			3725	

DATE MAILED: 11/16/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/065,776

Applicant(s)

CHEN, CHRISTOPHER

Examiner

Lowell A Larson

Art Unit

3725

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE THREE MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 August 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 to 52 is/are pending in the application.
- 4a) Of the above claim(s) 1 to 17 and 48 to 52 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 18 to 47 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 February 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 3/20/2003.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Applicant's election with traverse of Claims 18 to 47 (Group II) in the reply filed on August 18, 2004 is acknowledged. The traversal is on the ground(s) that the invention identified in the restriction requirement have not been shown to be "independent". This is not found persuasive because MPEP 802.01 exemplifies "independent" as being unconnected in design, operation or effect. The restriction requirement points out that the claimed inventions, as grouped, are independent because each has utility separate and independent of the others, i.e., are unconnected in operation. Thus the requirements of § 802.01 are present, and restriction is proper under the guidelines of MPEP 806.05(d)

The requirement is still deemed proper and is therefore made FINAL.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 18, 27 and 47 are rejected under 35 U.S.C. 103(a) as being unpatentable over Perfido et al. (Applicant's citation) in view of Finkbeiner.

Perfido et al. discloses comminution of cryogenically treated crumb rubber by apparatus which may include a grinding mill (step 4) followed by a hammer mill (step 8), as required by these claims.

Finkbeiner discloses grinding crumb rubber with grinding rolls driven at different speeds, and advises that the different circumferential velocities of the rolls desirably subjects the rubber particles to strong tensional stresses in the milling. See column 1, line 63 et seq.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to drive the grinding rolls in step 4 of Perfido et al. at different rotational velocities, following the teaching of Finkbeiner, in order to facilitate the grinding by the application of tensile stresses to the rubber particles.

4. Claims 19, 20, and 28 to 42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Perfido et al. in view of Finkbeiner as applied to Claim 18 above, and further in view of Muro.

These claims required the use of two sets of rolls for the comminution. Muro discloses rubber comminution with two successively acting roll sets to facilitate gradual break-down of the frozen segments. It would have been further obvious to employ two sets of rolls in the step 4 milling of Perfido et al., following the suggestion of Muro, in order to obtain a more gradual and thorough comminution of the rubber segments. To find an optimal speed differential between rates of roll rotation, as recited in Claims 23 or 31 for example, would be a routine exercise of experimentation to one skilled in the art, following the suggestion of Finkbeiner, for any particular material. Selection of suitable conventional milling rolls, as recited in Claim 42 for example, and drive mechanisms therefor would be an obvious exercise of mechanical design, and not a

patentable distinction absent a disclosure of criticality in the solution of stated problems with the use of any specific combination of roll surfaces and drive mechanism.

5. Claims 21 to 26 and 43 to 46 are rejected under 35 U.S.C. 103(a) as being unpatentable over Perfido et al. in view of Finkbeiner and Muro as applied to Claim 19 above, and further in view of McMillan et al.

These claims require cryogenic gas to added to the mills. McMillan et al. discloses scrap rubber milling in which cryogenic gas is supplied with the material during the milling, and advises that maintaining the cryogenic temperature in such a manner facilitates handling the ground particles. It would have been further obvious to add cryogenic gas to the milling in steps 4 and 8 of Perfido et al., following the teaching of McMillan et al., in order to facilitate handling of the comminuted material. McMillan et al. also advises that at least some of the material can be pre-cooled by immersion in cryogenic fluid, as required by Claim 43.

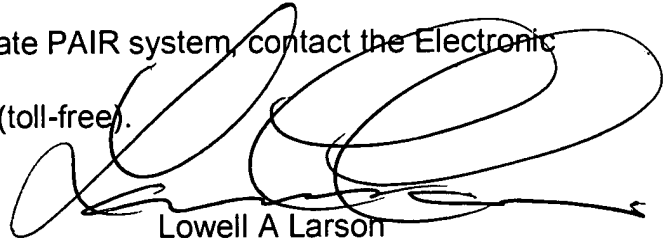
Conclusion

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lowell A Larson whose telephone number is 703 308-1873. The examiner can normally be reached from 8:30 AM - 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Alan Ostrager can be reached at 703 308-3136. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 3725

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read 'Lowell A. Larson', is written over the text of the paragraph.

Lowell A Larson
Primary Examiner
Art Unit 3725

LAL
November 12, 2004